

### Abstract of the Disclosure

A MEMS-based device to steer and manipulate beams of light traveling in free-space in an optical switch. The optical switch is based on a rotating vertical micro-mirror constructed on a surface of a substrate. At least one input optical fiber is arranged to direct at least one optical signal through free-space along a first optical path parallel to the surface of the substrate. A plurality of output optical fibers are arranged to receive the optical signal traveling through free-space along other optical paths not co-linear with the first optical path. At least one substantially vertical, rotating micro-mirror assembly is constructed on the substrate. The assembly includes a rotating micro-mirror with a vertical centerline and an axis of rotation both perpendicular to the surface, but not co-linear. The rotating micro-mirror is rotatable between a first position not in the first optical path and at least a second position redirecting the optical signal to one of the output optical fibers.

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